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Nebraska Summary: S876 Challenger MT685D

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SUMMARY OF OECD TEST 2722-NEBRASKA SUMMARY 876

CHALLENGER MT685D DIESEL

TECHSTAR TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1067 rpm)						
305.4 (227.7)	2100	16.79 (63.55)	0.386 (0.234)	18.18 (3.58)	1.12 (4.23)	
Standard Power Take-off Speed (1000 rpm)						
331.0 (246.8)	1967	17.62 (66.69)	0.373 (0.227)	18.78 (3.70)	1.18 (4.46)	
Maximum Power (1 hour)						
333.2 (248.5)	1950	17.65 (66.82)	0.372 (0.226)	18.88 (3.72)	1.21 (4.59)	

VARYING POWER AND FUEL CONSUMPTION

305.4 (227.7)	2100	16.79 (63.55)	0.386 (0.234)	18.18 (3.58)	1.12 (4.23)	Air temperature
261.8 (195.2)	2118	14.64 (55.41)	0.392 (0.238)	17.89 (3.52)	0.85 (3.22)	70°F (21°C)
197.2 (147.0)	2127	11.39 (43.10)	0.405 (0.246)	17.31 (3.41)	0.63 (2.37)	Relative humidity
132.0 (98.4)	2136	8.31 (31.47)	0.441 (0.268)	15.88 (3.13)	0.41 (1.54)	35%
66.2 (49.4)	2145	5.37 (20.33)	0.568 (0.345)	12.33 (2.43)	0.23 (0.88)	Barometer
----	2153	2.70 (10.23)	----	----	0.06 (0.22)	30.2" Hg (102.4 kPa)

Maximum torque - 1042 lb.-ft. (1413 Nm) at 1500 rpm
Maximum torque rise - 36.5%
Torque rise at 1700 engine rpm - 30%
Power increase at 1950 engine rpm - 9.1%

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—Turtle9									
245.7 (183.2)	16630 (73.98)	5.54 (8.92)	2101	3.9	0.465 (0.282)	14.90 (2.93)	158 (70)	73 (23)	29.0 (98.1)
75% of Pull at Maximum Power—Turtle9									
188.1 (140.3)	12300 (54.72)	5.74 (9.23)	2123	2.6	0.476 (0.289)	14.50 (2.85)	165 (74)	73 (23)	29.3 (99.3)
50% of Pull at Maximum Power—Turtle9									
128.2 (95.6)	8205 (36.49)	5.86 (9.44)	2134	1.7	0.514 (0.312)	13.47 (2.65)	156 (69)	73 (23)	29.3 (99.3)
75% of Pull at Reduced Engine Speed—Turtle 11									
187.9 (140.1)	12310 (54.75)	5.72 (9.21)	1762	2.7	0.443 (0.269)	15.60 (3.07)	163 (73)	72 (22)	29.3 (99.3)
50% of Pull at Reduced Engine Speed—Turtle 11									
129.3 (96.4)	8250 (36.69)	5.88 (9.46)	1771	1.8	0.461 (0.280)	14.99 (2.95)	156 (69)	73 (23)	29.3 (99.3)

Location of tests: DLG - Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: January - July, 2012.

Manufacturer: AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, France

CONSUMABLE FLUIDS: Fuel No. 2 Diesel
Specific gravity converted to 60°/60°F (15°/15°C) 0.841
Fuel weight 6.99 lbs/gal (0.840 kg/l)
Diesel Exhaust Fluid (DEF) 32% aqueous urea solution
DEF weight 9.10 lbs/gal (1.093 kg/l)
Oil SAE 10W40
API service classification CI4
Transmission and hydraulic lubricant BP STOU 10W/40
Front axle lubricant SAE 85W90 API GL5

ENGINE: Make Sisu Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F (diesel exhaust fluid) technology **Serial No.** W423
Crankshaft lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.370" x 5.709" (111.0 mm x 145.0 mm)
Compression ratio 16.7 to 1
Displacement 513 cu in (8419 ml)
Starting system 12 volt
Lubrication pressure **Air cleaner** two paper elements
Oil filter one full flow cartridge
Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil
Fuel filter one paper element
Muffler vertical
Cooling medium temperature control thermostat and variable speed fan

CHASSIS: **Type** front wheel assist **Serial No.** V319022
Tread width rear 72.8" (1850 mm) to 74.8" (1900 mm) front 70.9" (1800 mm) to 76.8" (1950 mm)
Wheelbase 122.2" (3105 mm)
Hydraulic control system direct engine drive
Transmission CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph (km/h)** forward: Low range 0-18 (0-30), high range 0-25 (0-40) reverse: Low range 0-12 (0-19), high range 0-12 (0-39)
Clutch a foot pedal controls the hydrostatic oil flow
Brakes multiple wet disc hydraulically operated by two foot pedals that can be locked together
Steering hydrostatic
Power take-off 1000 rpm at 1970 engine rpm
Unladen tractor mass 25200 lb (11430 kg)

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged) MAXIMUM POWER AT SELECTED SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Turtle 6									
219.5 (163.7)	25170 (111.97)	3.27 (5.26)	2084	15.0	0.523 (0.318)	13.22 (2.60)	165 (74)	73 (23)	29.6 (100.3)
Turtle 7.5									
262.9 (196.1)	22845 (101.63)	4.32 (6.94)	1947	7.0	0.455 (0.276)	15.20 (2.99)	158 (70)	73 (23)	29.6 (100.4)
Turtle 9									
266.5 (198.7)	19200 (85.41)	5.21 (8.38)	1952	4.9	0.448 (0.272)	15.45 (3.04)	162 (72)	70 (21)	29.6 (100.3)
Turtle 11									
268.7 (200.4)	15905 (70.76)	6.34 (10.20)	1954	3.5	0.447 (0.272)	15.48 (3.05)	154 (68)	68 (20)	29.6 (100.3)
Turtle 13									
264.9 (197.5)	13640 (60.68)	7.28 (11.72)	1950	2.9	0.453 (0.276)	15.28 (3.01)	156 (69)	68 (20)	29.6 (100.3)
Turtle 15									
260.2 (194.0)	11395 (50.70)	8.56 (13.78)	1953	2.4	0.461 (0.281)	15.00 (2.96)	163 (73)	68 (20)	29.6 (100.3)
Turtle 17									
256.9 (191.6)	9800 (43.60)	9.83 (15.82)	1961	2.0	0.466 (0.284)	14.85 (2.93)	163 (73)	68 (20)	29.6 (100.3)
Rabbit 9									
244.1 (182.0)	17800 (79.18)	5.14 (8.27)	1950	4.4	0.481 (0.292)	14.39 (2.83)	156 (69)	70 (21)	29.6 (100.3)
Rabbit 11									
256.4 (191.2)	15360 (68.32)	6.26 (10.08)	1951	3.4	0.465 (0.283)	14.87 (2.93)	158 (70)	70 (21)	29.6 (100.3)
Rabbit 13									
264.9 (197.5)	13635 (60.66)	7.28 (11.72)	1953	2.9	0.450 (0.273)	15.38 (3.03)	163 (73)	68 (20)	29.6 (100.3)
Rabbit 15									
263.9 (196.8)	11475 (51.04)	8.62 (13.88)	1954	2.4	0.448 (0.273)	15.43 (3.04)	163 (73)	68 (20)	29.6 (100.3)
Rabbit 17									
266.2 (198.5)	10070 (44.80)	9.91 (15.95)	1956	2.1	0.450 (0.274)	15.38 (3.03)	163 (73)	66 (19)	29.6 (100.3)
Rabbit 19									
263.8 (196.7)	9205 (40.94)	10.75 (17.30)	1962	1.8	0.451 (0.275)	15.33 (3.02)	158 (70)	66 (19)	29.6 (100.3)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE: The data on this summary was obtained from OECD report 2722 conducted on the Massey Ferguson 8690 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 38% torque rise, 29 hp power bulge, nor 3 point lift capacity of 22760 lbs (10323 kg). The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2722**, Nebraska Summary 876, January 30, 2013.

Roger M. Hoy
Director

M.R. Riley
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At no load in Turtle - 4.6 mph (7.5 km/h) - no load	70.0
Bystander	---

TIRES AND WEIGHT

Rear Tires - No., size, ply & psi (kPa)
Front Tires - No., size, ply & psi (kPa)
Height of Drawbar
Static Weight with operator - Rear
- Front
- Total

Tested Without Ballast

Two 710/75R42;***;12(80)
Two 600/65R34;***;12(80)
22.2 in (565 mm)
14100 lb (6395 kg)
11265 lb (5110 kg)
25365 lb (11505 kg)

HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: No, Yes

OECD Static test

Maximum force exerted through whole range: 17850 lbs (79.4 kN) (claw type lower links)
20345 lbs (90.5 kN) (Quick hitch)

i) Sustained pressure at compensator cutoff: 2755 psi (190 bar)
two outlet sets combined

ii) Pump delivery rate at minimum pressure: 46.2 GPM (174.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 37.9 GPM (143.6 l/min)

Delivery pressure: 2380 psi (164 bar)

Power: 52.6 HP (39.3 kW)

single outlet set

ii) Pump delivery rate at minimum pressure: 28.9 GPM (109.3 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 26.1 GPM (103.2 l/min)

Delivery pressure: 2290 psi (158 bar)

Power: 34.9 HP (27.2 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	Claw lower links		Quick Hitch	
	inch	mm	inch	mm
A	31.9	810	31.9	810
B	14.6	370	14.6	370
C	19.1	484	19.1	484
D	15.9	405	15.9	405
E	12.4	315	12.4	315
F	13.0	330	13.0	330
G	40.4	1025	40.4	1025
H	2.0	50	2.0	50
I	17.7	450	17.7	450
J	27.4	695	27.4	695
K	24.8	630	24.8	630
L	52.4	1330	52.4	1330
*L'	--	--	56.3	1430
M	29.8	757	33.7	857
N	42.9	1090	42.9	1090
O	9.1	230	9.8	250
P	54.3	1380	50.4	1280
Q	41.5	1055	41.2	1046
R	37.0	940	37.0	940

*L' to Quick Attach ends

